



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

His *Theory of Apertures*, though he seems to think it very authentick, yet to me it seems not so clear. For, the same Glass will endure greater or lesser *Apertures*, according to the lesser or greater Light of the *Object*: If it be for the looking on the *Sun* or *Venus*, or for seeing the *Diameters* of the *Fix'd Stars*, then smaller *Apertures* do better; if for the *Moon* in the *daylight*, or on *Saturn*, or *Jupiter*, or *Mars*, then the largest. Thus I have often made use of a 12 foot-Glass to look on *Saturn* with an *Aperture* of almost 3 inches, and with a single Eye-glass of 2 inches *double convex*: but, when with the same Glass I looked on the *Sun* or *Venus*, I used both a smaller *Aperture*, and shallower *Charge*. And though M. *Auzout* seems to find fault with the *English* Glass of 36 foot, that had an *Aperture* of but $2\frac{1}{2}$ inches *French*, as also, with a 60 foot *Tube*, used but with an *Aperture* of 3 inchess yet I do not find, that he hath seen Glasses of that length, that would bear greater *Apertures*, and 'tis not impossible, but his *Theory of Apertures* may fail in longer Glasses.

Of a means to illuminate an Object in what proportion one pleaseth ; and of the Distances requisite to burn Bodies by the Sun.

One of the means used by M. *Auzout* to enlighten an *Object*, in what proportion one pleaseth, is by some great *Object-Glass*, by him called a *Planetary* one, because that by it he shews the difference of Light, which all the *Planets* receive from the *Sun*, by making use of severall *Apertures*, proportionate to their distance from the *Sun*, provided that for every 9 foot draught, or thereabout, one inch of *Aperture* be given for the *Earth*. Doing this, one sees (*saint he*) that the Light which *Mercury* receives, is far enough from being able to burn Bodics, and yet that the same Light is great enough in *Saturn* to see cleer there, seeing that (*to him*) it appears greater in *Saturn*, than it doth upon our *Earth*, when it is overcast with Clouds: Which (*he adds*) would scarce be believed, if by means of this Glass it did not sensibly appear so: Whereof he promises to discourse more fully in his

Treatise of the usefulness of great Optick-Glasses, where he also intends to deliver several Experiments, by him made, 1. Touching the quantity of Light, which a Body, that is 10. 15 and 20 times, &c. remoter than *Saturn*, would yet receive from the *Sun*. 2. Touching the quantity of Light, by which the *Earth* is illuminated even in the *Eclipses* of the *Sun*, in proportion of their bigness. 3. Touching the quantity of Light, which is necessary to burn Bodies: he having found, that not abating the Light, which is reflected by the Surfaces of the Glasses (whereof he confesseth, he doth not yet exactly know the quantity) there wou'd be necessary about 50 times as much Light, as we have here, for the burning of *Black* Bodies; and neer 9 times more for the burning of *White* Bodies, than for the burning of *Black* ones: and so observing the immediate proportions between these two, for burning Bodies of other Colors. Whence (he tells us) he hath drawn some consequences, touching the distance, at which we may hope, to burn Bodies here, by the means of *great Glasses* and *great Looking-glasses*. So that (*saith he*) we must yet be seven times neerer the *Sun*, than we are, to be in danger of being burned by it. Where he mentions, that having given *Instructions* to certain persons, gon to travel in *Hot Countries*, he hath among other particulars recommended to them, to try by means of *great Burning-glasses*, with how much less *Aperture* they will burn *there*, than *here*, to know from thence, whether there be more Light *there* than *here*; and how much; since this perhaps may be the only means of trying it, supposing, the same matters be used: although the difference of the Air already heated both in *hot Countries*, and in the *Planets*, that are neerer than we may alter, if not the quantity of Light, at least that of the Heat, found there.

A further Account, touching Signor Campani's Book and Performances about Optick-glasses.

In the above-mentioned *French Tract*, there is also contained M. *Auzout's* Opinion of what he had found New in the *Treatise* of Signor *Campani*, which was spoken of in the first *Papers* of their *Transactions*, concerning both the Effect of the *Telescope*, contrived after a peculiar way by the said *Campani* at *Rome*, and his